

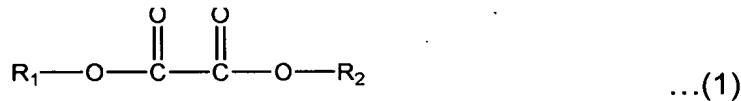
What is claimed is:

1. An organic electrolytic solution comprising:

a lithium salt;

an organic solvent; and

5 an oxalate compound of formula (1) below:



10 where R₁ and R₂ are independently selected from hydrogen atom, halogen atom, a hydroxy group, a substituted or unsubstituted C₁-C₂₀ alkyl group, a substituted or unsubstituted C₁-C₂₀ alkoxy group, a substituted or unsubstituted C₁-C₂₀ alkenyl group, a substituted or unsubstituted C₆-C₃₀ aryl group, a substituted or unsubstituted C₆-C₃₀ arylalkyl group, a substituted or unsubstituted C₆-C₃₀ aryloxy group, a substituted or unsubstituted C₂-C₃₀ heteroaryl group, a substituted or unsubstituted C₂-C₃₀ heteroarylalkyl group, a substituted or unsubstituted C₂-C₃₀ heteroaryloxy group, a substituted or unsubstituted C₅-C₂₀ cycloalkyl group, and a substituted or unsubstituted C₂-C₂₀ heterocycloalkyl group.

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20 2. The organic electrolytic solution of claim 1, wherein the amount of the oxalate compound of said formula (1) is in a range of 0.001-10 parts by weight with respect to 100 parts by weight of the organic solvent.

25 3. The organic electrolytic solution of claim 1, wherein the oxalate compound of said formula (1) is selected from the group consisting of diethyl oxalate, dimethyl oxalate, dipropyl oxalate, dibutyl oxalate, and bis-(4-methylbenzyl) oxalate.

30 4. The organic electrolytic solution of claim 1, wherein the organic solvent is at least one selected from the group consisting of a polyglyme, a dioxolane, a carbonate, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

5. The organic electrolytic solution of claim 4, wherein the polyglyme for the organic solvent is selected from the group consisting of diethyleneglycol

dimethylether ($\text{CH}_3(\text{OCH}_2\text{CH}_2)_2\text{OCH}_3$), diethyleneglycol diethylether ($\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_2\text{OC}_2\text{H}_5$), triethyleneglycol dimethylether ($\text{CH}_3(\text{OCH}_2\text{CH}_2)_3\text{OCH}_3$), and triethyleneglycol diethylether ($\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_3\text{OC}_2\text{H}_5$).

5 6. The organic electrolytic solution of claim 4, wherein the dioxolane for the organic solvent is at least one selected from the group consisting of include 1,3-dioxolane, 4,5-diethyl-dioxolane, 4,5-dimethyl-dioxolane, 4-methyl-1,3-dioxolane, and 4-ethyl-1,3-dioxolane.

10 7. The organic electrolytic solution of claim 4, wherein the organic solvent is a mixture of the polyglyme and the dioxolane in a ratio of 1:9-9:1 by volume.

15 8. The organic electrolytic solution of claim 4, wherein the carbonate for the organic solvent is at least two selected from the group consisting of ethylene carbonate, methylene carbonate, diethyl carbonate, dimethyl carbonate, γ -butyrolactone, propylene carbonate, methyl ethyl carbonate, and vinylene carbonate.

20 9. The organic electrolytic solution of claim 1, wherein the organic solvent is at least one of a polyglyme and a dioxolane.

25 10. The organic electrolytic solution of claim 9, wherein the polyglyme for the organic solvent is selected from the group consisting of diethyleneglycol dimethylether ($\text{CH}_3(\text{OCH}_2\text{CH}_2)_2\text{OCH}_3$), diethyleneglycol diethylether ($\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_2\text{OC}_2\text{H}_5$), triethyleneglycol dimethylether ($\text{CH}_3(\text{OCH}_2\text{CH}_2)_3\text{OCH}_3$), and triethyleneglycol diethylether ($\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_3\text{OC}_2\text{H}_5$).

30 11. The organic electrolytic solution of claim 9, wherein the dioxolane for the organic solvent is at least two selected from the group consisting of include 1,3-dioxolane, 4,5-diethyl-dioxolane, 4,5-dimethyl-dioxolane, 4-methyl-1,3-dioxolane, and 4-ethyl-1,3-dioxolane.

12. The organic electrolytic solution of claim 9, wherein the organic solvent further comprises at least one selected from the group consisting of sulfolane, dimethoxyethane, and diethoxyethane.

5 13. The organic electrolytic solution of claim 1, wherein the organic solvent is at least one selected from the group consisting of a carbonate, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

10 14. The organic electrolytic solution of claim 13, wherein the carbonate for the organic solvent is at least one selected from the group consisting of ethylene carbonate, methylene carbonate, diethyl carbonate, dimethyl carbonate, γ -butyrolactone, propylene carbonate, methyl ethyl carbonate, and vinylene carbonate.

15 15. The organic electrolytic solution of claim 1, wherein the lithium salt has a concentration of 0.5-2.0M.

20 16. A lithium battery comprising:
a cathode;
an anode;
a separator interposed between the cathode and the anode; and
the organic electrolytic solution of claim 1.

25 17. The lithium battery of claim 16, wherein the cathode is formed of at least one selected from the group consisting of a lithium composite oxide, simple substance sulfur, kasolite containing Li_2S_n where $n \geq 1$, organo-sulfur, and $(\text{C}_2\text{S}_x)_y$ where x ranges from 2.5 to 20 and $y \geq 2$.

30 18. The lithium battery of claim 16, wherein the anode is formed as a lithium metal electrode, a lithium-metal alloy electrode, a lithium-inert sulfur composite electrode, a carbonaceous electrode, or a graphite electrode.